

**MODEL INSERT**  
**MEASLES AND RUBELLA (MR) COMBINED VACCINE**

**DESCRIPTION**

The vaccine is a freeze-dried powder containing two antigens - measles and rubella. It must be reconstituted only with the sterile diluent provided for that purpose.

a) The measles vaccine component is a live, attenuated viral vaccine. Each dose of 0.5 ml contains not less than.....(specify) CCID50 (cell culture infective doses 50%) of viral vaccine strain.....(specify), prepared in ... (specify substrate: diploid cell ( MRC5) or chick embryo fibroblast cells) and not more than .....µg of residual antibiotic.... (specify).

b) The rubella vaccine component is also a live, attenuated viral vaccine. Each dose of this vaccine contains a defined number of active virus particles (>1000 CCID50) culture infective doses 50%) of viral vaccine strain.....(specify), prepared in ... (specify substrate: diploid cells, MRC5 / WI-38) and not more than .....µg of residual antibiotic..... (specify).

**COMPOSITION**

**Dose**

Volume	0.5 ml
Measles	XXX CCID50
Rubella	XXX CCID50
Nature / amount of excipient	XX mg/ml
Nature / amount of stabilizer	XX mg/ml
Nature and amount of residual antibiotic	XX mg/ml

Diluent composition

**ADMINISTRATION**

MR vaccine is generally injected subcutaneously. The preferred site of injection is the upper arm. The lyophilizate must be reconstituted by adding the entire content of the supplied container of diluent to the vaccine vial. The vaccine pellet should be completely dissolved in the diluent. Following reconstitution, the vaccine should be inspected visually for any foreign particulate matter prior to administration. If observed, the vaccine must be discarded.

A sterile needle and sterile syringe must be used for the reconstitution of the vaccine and for each injection. Because of sensitivity to ultraviolet light, the vaccine must be stored in the dark at +2°C and +8°C and used within six (6) hours. Any opened vials remaining at the end of an immunization session (within six [6] hours of reconstitution) should be discarded. The vaccine vial monitor for this type of vaccine is attached to the vial cap and should be discarded when the vaccine is being reconstituted.

The diluent supplied is specially designed for use with this vaccine. Only this diluent may be used to reconstitute the vaccine. Do not use diluents from other types of vaccine or for measles vaccine from other manufacturers. Using an incorrect diluent will result in

damage to the vaccine and/or serious reactions to those receiving the vaccine. Diluent must not be frozen but must be cooled between +2°C and +8°C before used for reconstitution .

## **IMMUNIZATION SCHEDULE**

In countries where the incidence and mortality from measles is high in the first year of life, the recommended age for vaccination against measles is at 9 months of age (270 days) or shortly after. In countries where infection occurs later in life (due to sustained high vaccination coverage), the age of vaccination can be moved to 12-15 months. It is recommended that all children have two (2) opportunities for immunization with a measles-containing vaccine to reduce the number both of unvaccinated children and of those who are vaccinated but fail to respond to the vaccine (primary vaccination failures).

The second dose of measles-containing vaccine may be provided as early as one (1) month following the first dose through routine or supplemental immunization activities. The vaccine can be given safely and effectively simultaneously with DTP, Td, TT, BCG, polio (OPV and IPV), *Haemophilus influenzae* type b, hepatitis B, or yellow fever vaccines or vitamin A supplementation.

The combination vaccine produces an immunological response to each antigen equivalent to that following administration of each of the single antigen products. The safety and immunogenicity of this combination vaccine appears to be similar to that of its individual components.

## **SIDE EFFECTS**

Side effects following MR vaccination are mostly mild and transient, and are similar in frequency and severity to those following administration of each of the single antigen products.

Side effects following measles vaccination are generally mild and transient. Slight pain and tenderness at the site of injection may occur within 24 hours of vaccination, sometimes followed by mild fever and local lymphadenopathy. About 7 - 12 days after vaccination up to 5% of measles vaccine recipients may experience fever > 39.4 °C for 1 - 2 days. A transient rash may occur in approximately 2% of vaccinees, usually starting 7-10 days following vaccination and lasting 2 days. Side effects, with the exception of anaphylactic reactions, are less likely to occur after receipt of a second dose of measles-containing vaccine. Encephalitis has been reported following measles vaccination at a frequency of approximately one (1) case per one (1) million doses administered although a causal link is not proven.

Side effects following vaccination with rubella vaccine are also mild, particularly in children. Common side effects include pain, redness and induration at the site of injection. Low-grade fever and rash, lymphadenopathy, myalgia and paraesthesia are commonly reported. Joint symptoms tend to be rare in children (0% -3%) and in men, but are common among vaccinated adolescents and adult females; they include arthralgias (25%) and arthritis (10%) that usually last from a few days to two (2) weeks. These transient reactions seem to occur in non-immune individuals only, for whom the vaccine is important. Thrombocytopenia is rare and has been reported in less than 1 case per 30,000 doses administered. Anaphylactic reactions are also rare.

## **CONTRAINDICATIONS**

A previous allergic reaction to measles or MR vaccine is a contraindication. Persons with a history of an anaphylactic reaction to any components of the vaccine should not be vaccinated. Apart from these, there are few contraindications to the administration of MR vaccine. It is particularly important to immunize children with malnutrition. Low-grade fever, mild respiratory infections or diarrhoea, and other minor illnesses should not be considered as contraindications. On theoretical grounds measles vaccine should also be avoided in pregnancy. *Rubella vaccination should be avoided in pregnancy because of the theoretical (but never demonstrated) teratogenic risk. If pregnancy is being planned, then an interval of one (1) month should be observed after rubella immunization. No serious cases have been reported in more than 1000 susceptible pregnant women who inadvertently received a rubella vaccine in early pregnancy. Rubella vaccination during pregnancy is not an indication for abortion.*

### ***Immune deficiency***

Children with known or suspected HIV infection are at increased risk of severe measles and should be offered measles vaccine as early as possible. The standard WHO recommendation for children at high risk of contracting measles is to immunize with measles vaccine at six (6) months of age, followed by an extra dose at nine (9) months. The vaccine is contraindicated in persons who are severely immunocompromised as a result of congenital disease, HIV infection, advanced leukaemia or lymphoma, serious malignant disease, or treatment with high-dose steroids, alkylating agents or anti-metabolites, or in persons who are receiving immunosuppressive therapeutic radiation.

## **STORAGE**

Freeze-dried MR vaccine should be kept in the refrigerator between +2°C and +8°C until used. The vials of vaccine and the diluent should be transported together, but the diluent must not be frozen. Because of sensitivity to ultraviolet light the vaccine must be stored in the dark


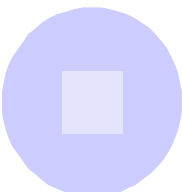

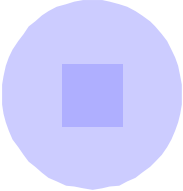
Freeze-dried measles vaccine should also be kept frozen at -20°C

## **PRESENTATION**

The vaccine comes in vials of .... dose(s).

Fig. The Vaccine Vial Monitor

### The vaccine vial monitor...

	✓	Inner square lighter than outer circle. <b>If the expiry date has not been passed, USE the vaccine.</b>
	✓	At a later time, inner square still lighter than outer circle. <b>If the expiry date has not been passed, USE the vaccine.</b>
	✗	<b>Discard point:</b> Inner square matches colour of outer circle. <b>DO NOT use the vaccine.</b>
	✗	<b>Beyond the discard point:</b> Inner square darker than outer ring. <b>DO NOT use the vaccine.</b>

The Vaccine Vial Monitors (VVMs) are on the cap of .....(specify vaccine) supplied through .....(specify supplier or manufacturer). The colour dot which appears on the label of the vial is a VVM. This is a time-temperature sensitive dot that provides an indication of the cumulative heat to which the vial has been exposed. It warns the end user when exposure to heat is likely to have degraded the vaccine beyond an acceptable level.

The interpretation of the VVM is simple. Focus on the central square. Its colour will change progressively. As long as the colour of this square is lighter than the colour of the ring, then the vaccine can be used. As soon as the colour of the central square is the same colour as the ring or of a darker colour than the ring, then the vial should be discarded.